

WHAT IS CLAIMED IS:

1. A transmission power control method for controlling the transmission power of downlink signals from base stations to a mobile terminal in a mobile communications system, comprising the steps of:

during soft handover, sending notification, from said mobile terminal to
5 said base stations, of the ID of the base station that is transmitting said downlink signal with the best downlink reception quality;

stopping transmission of user data to the mobile terminal from base stations that do not correspond to the base station ID notified by the mobile terminal;

10 estimating, at the mobile terminal, which base stations have a likelihood of transmitting user data;

using the downlink signals from these base stations that have a likelihood of transmitting user data, to decide, at the mobile terminal, whether the transmission power of these base stations is excessive or insufficient;

15 sending information, from the mobile terminal to these base stations, relating to excess or deficiency of their transmission power; and

increasing or decreasing the transmission power of these base stations in accordance with this information from the mobile terminal relating to excess or deficiency of their transmission power.

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2. A transmission power control method according to claim 1, wherein the base stations that have a likelihood of transmitting user data are estimated from the estimated uplink reception quality.

3. A transmission power control method according to claim 2, wherein base stations that are estimated to have a likelihood of transmitting user data are

base stations at which said estimated uplink reception quality is not good.

4. A transmission power control method according to claim 2, wherein the estimated uplink reception quality is calculated from the correlation between the increase or decrease in transmission power instructed by the transmission power control, and the increase or decrease in the power of the downlink signal
5 received from a base station.

5. A transmission power control method according to claim 1, wherein the signal obtained by combining the weighted downlink signals from the base stations that have a likelihood of transmitting user data is used for deciding whether the transmission power of the base stations is excessive or insufficient.
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6. A receiving method for demodulating user data in the downlink signal from base stations to a mobile terminal in a mobile communications system, comprising the steps of:

during soft handover, sending notification, from the mobile terminal to
5 the base stations, of the ID of the base station that is transmitting the downlink signal with the best downlink reception quality;

stopping transmission of user data to the mobile terminal from base stations that do not correspond to the base station ID notified by the mobile terminal;

10 estimating, at the mobile terminal, which base stations have a likelihood of transmitting user data; and

using the downlink signal from these base stations that have a likelihood of transmitting user data, to demodulate, at the mobile terminal, said user data.

7. A receiving method according to claim 6, wherein base stations that have a likelihood of transmitting user data are estimated from the estimated uplink reception quality.

8. A receiving method according to claim 7, wherein base stations that are estimated to have a likelihood of transmitting user data are base stations at which the estimated uplink reception quality is not good.

9. A receiving method according to claim 7, wherein the estimated uplink reception quality is calculated from the correlation between the increase or decrease in transmission power instructed by the transmission power control, and the increase or decrease in the power of the downlink signal received from a base station.

10. A receiving method according to claim 6, wherein the signal obtained by combining the weighted downlink signals from the base stations that have a likelihood of transmitting user data is used for demodulating the user data.

11. A mobile communications system in which the transmission power of the downlink signal is controlled, comprising:

a plurality of base stations, whereof a base station:

a) transmits user data when the base station ID that said base station has received as a notification corresponds to its own ID;

b) stops transmitting user data when said base station ID does not correspond to its own ID; and

c) increases or decreases its transmission power in accordance with notified information regarding excess or deficiency of its transmission power;

and also comprising:

at least one mobile terminal which, during soft handover:

i) notifies said base stations of the ID of the base station that is transmitting the downlink signal with the best downlink reception quality;

ii) estimates which base stations have a likelihood of transmitting said
15 user data;

iii) uses the downlink signals from the base stations so estimated to decide whether the transmission power of the base stations is excessive or insufficient; and

iv) sends information to the base stations informing them that their
20 transmission power is excessive or insufficient.

12. A mobile communications system in which the transmission power of the downlink signal is controlled, comprising:

a plurality of base stations, whereof a base station:

a) transmits user data when the base station ID that said base station
5 has received as a notification corresponds to its own ID; and

b) stops transmitting user data when said base station ID does not correspond to its own ID;

and also comprising:

at least one mobile terminal which, during soft handover:

10 i) notifies said base stations of the ID of the base station that is transmitting the downlink signal with the best downlink reception quality;

ii) estimates which base stations have a likelihood of transmitting said user data; and

iii) uses the downlink signals from the base stations so estimated to
15 demodulate said user data.

13. A mobile communications system according to claim 11 or claim 12,

wherein said mobile terminal estimates, from the estimated uplink reception quality, base stations that have a likelihood of transmitting user data.

14. A mobile communications system according to claim 13, wherein a base station which the mobile terminal estimates to have a likelihood of transmitting user data is a base station at which said estimated uplink reception quality is not good.

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15. A mobile communications system according to claim 13, wherein the mobile terminal calculates the estimated uplink reception quality from the correlation between the increase or decrease in transmission power instructed by the transmission power control, and the increase or decrease in the power of the downlink signal received from a base station.

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16. A mobile communications system according to claim 11, wherein the mobile terminal uses the signal obtained by combining weighted downlink signals from said estimated base stations, to decide whether the transmission power of the base stations is excessive or insufficient.

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17. A mobile communications system according to claim 12, wherein the mobile terminal uses the signal obtained by combining weighted downlink signals from said estimated base stations, to demodulate the user data.

18. A mobile terminal that controls the transmission power of the downlink signals from base stations in a mobile communications system, comprising:

base station selecting means for selecting, during soft handover, the base station that is transmitting said downlink signal with the best downlink reception quality, and for notifying the base stations of the ID of said base

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station, so as to cause only the selected base station to transmit user data;

downlink signal weight decision means for estimating base stations that have a likelihood of transmitting user data; and

downlink TPC command decision means for using the downlink signals
 10 from base stations that have a likelihood of transmitting user data, to decide whether the transmission power of these base stations is excessive or insufficient, and to instruct an increase or decrease of said transmission power.

19. A mobile terminal for receiving user data in the downlink signal from base stations in a mobile communications system, comprising:

base station selecting means for selecting, during soft handover, the base station that is transmitting said downlink signal with the best downlink
 5 reception quality, and for notifying the base stations of the ID of said base station, so as to cause only the selected base station to transmit user data;

downlink signal weight decision means for estimating base stations that have a likelihood of transmitting user data; and

data demodulating means for using downlink signals from the base
 10 stations that have a likelihood of transmitting user data, to demodulate the user data.

20. A mobile terminal according to claim 18 or claim 19, wherein said downlink signal weight decision means estimates, from the estimated uplink reception quality, base stations that have a likelihood of transmitting user data.

21. A mobile terminal according to claim 20, wherein a base station that said downlink signal weight decision means estimates as having a likelihood of transmitting user data is a base station at which said estimated uplink reception quality is not good.

22. A mobile terminal according to claim 20, wherein the downlink signal weight decision means calculates the estimated uplink reception quality from the correlation between the increase or decrease in transmission power instructed by the transmission power control, and the increase or decrease in the power of the downlink signal received from a base station.

23. A mobile terminal according to claim 18, wherein the downlink TPC command decision means uses the signal obtained by combining the weighted downlink signals from said estimated base stations to decide whether the transmission power of the base stations is excessive or insufficient.

24. A mobile terminal according to claim 19, wherein said data demodulating means uses the signal obtained by combining the weighted downlink signals from said estimated base stations to demodulate the user data.